

Decoupling consumption from our environmental pressures and impacts - a global Multi-Regional analysis with EXIOBASE

Topic: 514Z Special session: Compilation and Application of EXIOBASE 3 – a time series of highly detailed EE MRIOs

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If society wants to keep growing, it must decouple from environmental impact. Many developed countries are seeing this decoupling in terms of the environmental impact on/from their domestic territory. When looked from a consumption perspective, however, work on greenhouse gas and material footprints show an apparent lack of decoupling. We look into the rate of the decoupling from both a production and consumption perspective, and look beyond emissions and materials into multiple pressure indicators, and translate that to impact indicators where possible. We argue that ultimately it is lifestyles and well-being of the population that we want to improve, and that this is most closely linked to consumption based approaches.

We utilise the results from the EU fp-7 project DESIRE project, which seeks to investigate the development of resource efficiency indicators over time. In doing this, DESIRE adds a temporal dimension to previous multi-regional input-output (MRIO) work within the EXIOBASE database. We model technical change in the underlying supply use system based on exogenous growth of the economy from National Account data, and by using balancing techniques to incorporate and reconcile data sources. The analysis presents the first results from the DESIRE project in terms of EXIOBASE v3, and we anticipate this database to be finalised and publicly available in early 2016.

Using a MRIO model allows us to explicitly analyse different drivers of impact over time. We focus on six drivers – end-of-pipe technology; other technology; the role of trade; the role of the consumer; population and affluence. As such, we can explicitly compare the role that globalisation has had on rates of decoupling – has the opportunity to trade with resource rich countries reduced our rates of decoupling or increased?

We find that decoupling of land and water based pressures has had a much lower rate than greenhouse gas and material based decoupling. It can be seen that efforts to contain greenhouse gas emissions are flowing through the consumption based emissions indicators, but not those indicators unlinked from energy use.